

Some *Nesothrips* (Insecta, Thysanoptera, Phlaeothripidae) from East Asia

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ABSTRACT—Four East Asian species of the genus *Nesothrips* Kirkaldy are reported. *N. brevicollis* sensu Mound (1974) is divided into two species, *N. brevicollis* (Bagnall) and *N. minor* (Bagnall). *N. malacca* Mound is additionally recorded from West Malaysia, Indonesia and the Philippines. An additional new species, *N. yasumatsui* Okajima, is described from Thailand. These thrips are usually found on grass tussocks, dead branches or leaves, and may be fungus-feeders.

The genus *Nesothrips* Kirkaldy belongs to the tribe Pygothripini of the subfamily Idolothripinae, and was revised by Mound in 1974 [1]. In 1983, the related genus *Rhaebothrips* Karny was synonymized with this genus by Mound and Palmer [2]. According to these publications, 22 *Nesothrips* species have been known from the world, and three of them have been known from eastern Asia (exclusive of Oceanic islands). *N. brevicollis* (Bagnall) and *N. lativentris* (Karny) are widespread in the tropical and subtropical regions of eastern Asia, and another species, *N. malacca* Mound, is distributed to West Malaysia and Sumatra.

Two widespread species, *brevicollis* sensu Mound, 1974, and *lativentris*, show intraspecific variation between local populations in colour and structure. It is therefore very difficult to know if two or more species are involved under the respective names. Recently, I had an opportunity to examine a long series of *brevicollis* sensu Mound, 1974, from many localities. After a careful examination, it became clear that two distinct species were involved in the lot. The other species, *lativentris*, is excluded from the present paper, since the material at hand is still insufficient to clarify its status.

In this paper, four *Nesothrips* species from eastern Asia are dealt with; they are: *N. brevicollis*, *N.*

malacca, *N. minor* (Bagnall) which is revived from a synonym of *brevicollis*, and an additional new species from Thailand.

The holotype and most of the paratypes of the new species described hereinafter will be preserved in the Laboratory of Entomology, Tokyo University of Agriculture.

The following abbreviations are used for the five pairs of prothoracic setae: aa, antero-angulars; am, antero-marginals, ml, mid-laterals; pa, postero-angulars; epim, epimerals.

Nesothrips brevicollis (Bagnall, 1914)
(Figs. 1–6, 11–13, 16–17, 19 and 20)

Oedemothrips (?) *brevicollis* Bagnall, 1914 [3], 29–30.

Neosmerinthothrips formosensis Priesner, 1935 [4], 368–372. [Synonymized by Mound, 1974 [1], 162]. *Nesothrips brevicollis*: Mound, 1974 [1], 162–163 (in part).

[*Nesothrips fulviceps*: Kudô, 1974 [5], 115; misidentification].

Bagnall [3] described this species only from the apterous form. Recently, Mound [1] treated *Nesothrips minor* (Bagnall), which was described only from the macropterous form, as a synonym of this species. He considered that the two are different morphs of the same species. More recently, however, I studied more than 200 recently collected specimens of *brevicollis* sensu Mound,

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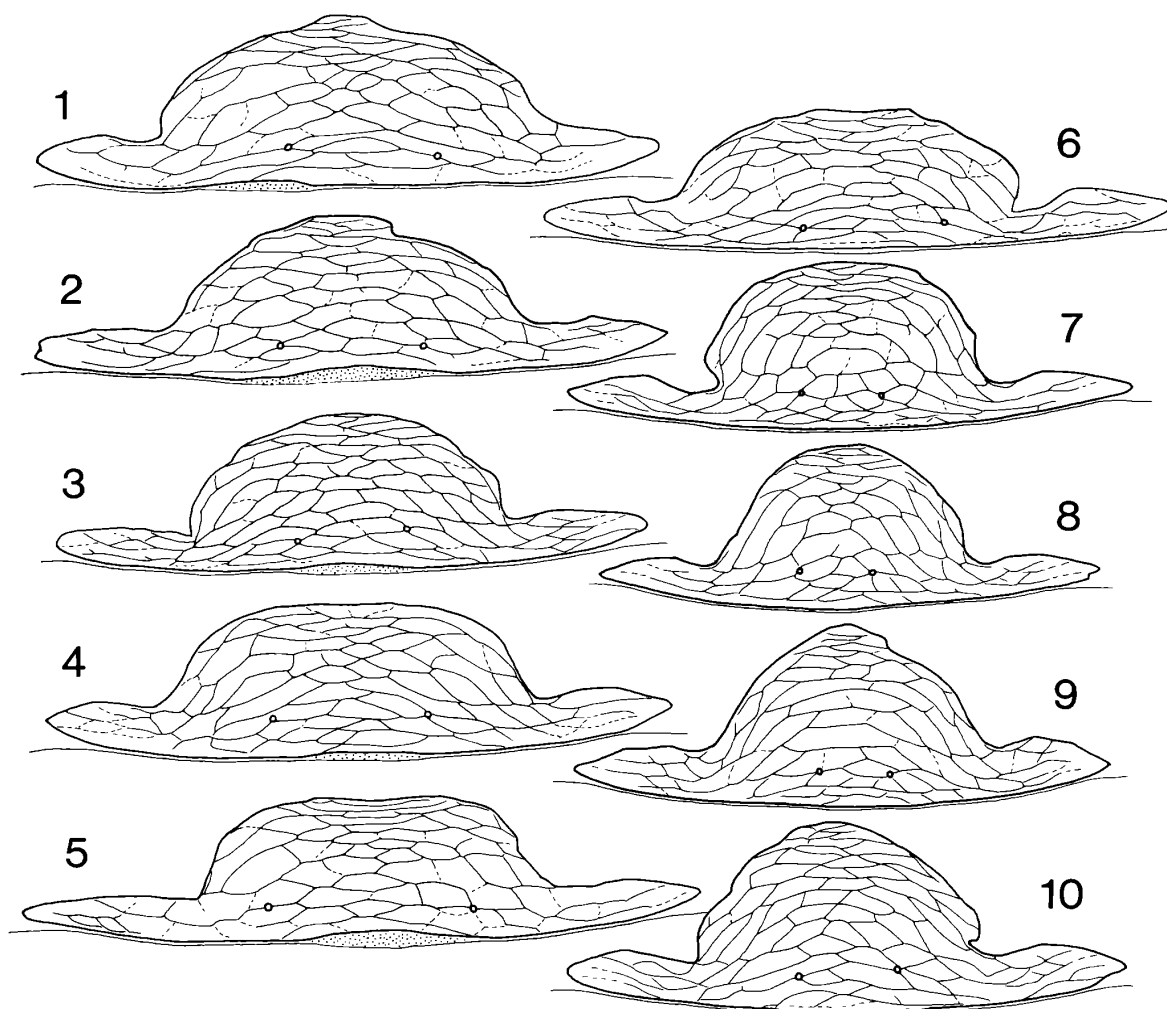
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1974, from many localities in East Asia and the Hawaiian Islands, and after carefully examining them, came to the conclusion that they included two distinct species. In the present paper, I regard one of them as *brevicollis* (Bagnall) and the other as *minor* (Bagnall).

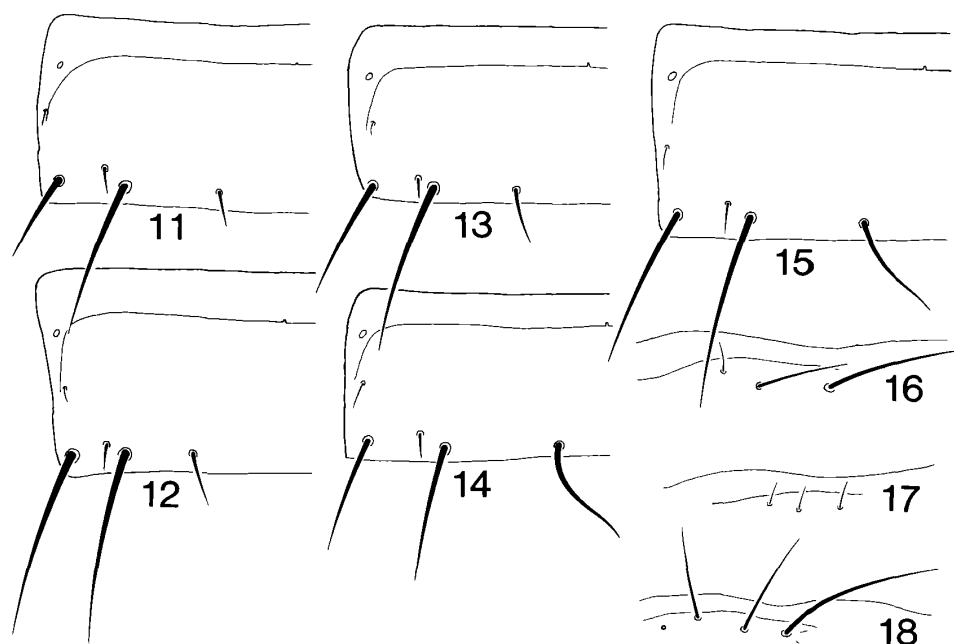
There are some differences between them, which are probably not related to the presence or absence of wings. Relative length of the tube is shorter than the head with rounded sides in *brevicollis*, but longer than the head with rather straight sides in *minor*. The pelta of *brevicollis* is sometimes eroded in median portion of the posterior margin and with somewhat wide median lobe (Figs. 1–6), though that of *minor* is not eroded and

with narrower median lobe (Figs. 7–10), in both macropterae and micropterae. Moreover, the wing retaining setae of *brevicollis* are short and straight (Figs. 11–13), while those of *minor* are long and curved (Figs. 14–15) also in both macropterae and micropterae. In macropterae, only two subbasal wing setae are developed in *brevicollis* (Fig. 16), but three of them are developed in *minor* (Fig. 18). Finally, these two forms show sympatric distribution in the Ogasawara (Bonin) Islands, northwestern end of Micronesia. Judging from these characters and distribution, I consider *brevicollis* and *minor* to be specifically different.

Thus redefined, *N. brevicollis* is distributed to Japan, including the Ryukyu and the Ogasawara



FIGS. 1–10. Female pelta of *Nesothrips* species—1–6, *N. brevicollis*, macroptera from Honshu, Japan (1), macroptera from Ishigaki Is., Ryukyus (2), macroptera from Taiwan (3), microptera from Honshu, Japan (4), aptera from the Ogasawara Isls. (5) and microptera from Okinawa Is., the Ryukyus (6); 7–10, *N. minor*, macroptera from the Ogasawara Isls. (7), macroptera from Hawaii (8), macroptera from Thailand (9) and microptera from Java (10).



FIGS. 11–15. Left half of female abdominal tergite VI of *Nesothrips* species—11–13, *N. brevicollis*, aptera from the Ogasawara Is. (11), macroptera from Ishigaki Is., the Ryukyus (12) and microptera from Yonaguni Is., the Ryukyus (13); 14–15, *N. minor*, macroptera from the Ogasawara Is. (14) and microptera from Java (15). FIGS. 16–18. Subbasal wing setae of *Nesothrips* species—16–17, *N. brevicollis* from Honshu, Japan (16) and from Taiwan (17); 18, *N. minor* from the Ogasawara Is.

Islands, and Taiwan. It is common at certain localities, and is found mainly on grass tussocks. Micropterous (rarely apterous) females and males are usually found but macropterous females are collected only occasionally.

There are some differences between local populations in colour and structure. Specimens from the Ryukyus and Taiwan have somewhat smaller body and paler head, in contrast with specimens from Honshu, mainland of Japan, which have larger body and darker head. Moreover, macropterous females from Taiwan have reduced subbasal wing setae (Fig. 17), and two apterous females from the Ogasawara Islands have somewhat small compound eyes. However, there are some intermediate specimens from the Ryukyus, and there is no evidence that more than one species is involved.

The macropterous female (Figs. 19 and 20) and micropterous male are briefly described below.

Female (macroptera). General structure almost as in micropterous female: Forewings each with 6–11 duplicated cilia; subbasal wing setae B_1 reduced, B_2 and B_3 distinct, B_3 the longest, but they

are reduced in material from Taiwan; wing retaining setae short and rather straight.

Male (microptera). Some of the structures show extreme allometry: Prominent setae of head and prothorax well developed in large male; prothorax and forefemora well developed in large male; foretarsus with a tooth which is variable in shape and size; prothorax with a strong median longitudinal line in large male, without in small male.

Measurements of large (small) males in μm . Total distended body length 1900 (1500). Head length 175 (150), maximum width across cheeks 192 (185); eye length 65 (55). Pronotum median length 175 (110), width 260 (210); forefemur length 230 (130). Abdominal tergites median length/width as follows: II 65 (55)/ 370 (330); IV 80 (65)/ 400 (350); VI 110 (90)/ 405 (340); VIII 95 (85)/ 280 (255); IX 75 (65)/ 170 (160). Tube length 145 (125), basal width 90 (78), apical width 44 (40). Antennal segments I to VIII length/width as follows: 38 (37)/ 40 (35); 50 (48)/ 34 (31); 63 (57)/ 30 (30); 65 (55)/ 31 (30); 68 (58)/ 32 (30); 57 (48)/ 33 (30); 43 (38)/ 26 (25); 30 (25)/ 13 (13).

Length of setae. Postocellars 60–65 (32–40);

postoculars 98–102 (68–70). Prothoracic aa 35–45 (less than 20), am 28–35 (25), ml 85–105 (43–45), pa 85–98 (48–50), epim 75–77 (60–65). B₁ on tergite IX 80–82 (75–80), B₂ 100–105 (85–88); anals 110–120 (90–95).

Material examined. Taiwan: Makoo, Hookotou Is., lectotype ♀ (mic.) and 1 paralectotype ♀ (mic.) of *Neosmerinthothrips formosensis*, 5-vi-1930, S. Minowa (in coll. Senckenberg Museum, Frankfurt); Pintung Hsien, Kenting National Park, on grass, 1 ♀ (mic.) 25-v-1972, 2 ♀ 1 ♂ (mic.) and 1 ♀ (mac.) 18-iii-1984, 2 ♀ 3 ♂ (mic.) and 2 ♀ (mac.) 19-iii-1984, S. Okajima; Kaohsiung Hsien, Liukuei, 2 ♀ (mic.) on bush, 22-iii-1984, S. Okajima; Nantou Hsien, Nanshanchi, on grass 3 ♀ 1 ♂ (mic.) 25-iii-1984, 2 ♀ (mic.) 30-iii-1984, S. Okajima; Nantou Hsien, foot of Mt. Nonkao, nr. Wanta, 1 ♀ (mic.) on grass, 1-iv-1984, S. Okajima; Taipei Hsien, Mt. Tatung-shan, 2 ♀ 1 ♂ (mic.) on grass, 4-iv-1984, S. Okajima; Lan-Yu, 2 ♀ (mic.) 6-vi-1980, H. Makihara. Japan, the Ryukyus (including Satsunan Is.): Yonaguni Is., Mt. Urabu, 2 ♀ (mic.), 19-iii-1977, W. Suzuki; Yonaguni Is., Sonai, 1 ♀ (mic.) on dead oak, 29-iii-1975, S. Saito; Ishigaki Is., 1 ♀ (mac.), 6-vi-1971, S. Okajima; Ishigaki Is., Mt. Omoto, 1 ♀ (mic.) 12-vi-1972, 1 ♀ (mic.) 14-vi-1972, S. Okajima; Ishigaki Is., Hirakubo, 3 ♀ (mic.) on *Miscanthus*, 15-vi-1972, S. Okajima; Iriomote Is., Sonai, 2 ♀ (mic.) on dry twigs, 19-vi-1972, S. Okajima; Iriomote Is., Mt. Tedou, 1 ♀ (mic.) on dead Palmae, 19-vi-1972, S. Okajima; Okinawa Is., Nago, 2 ♀ 1 ♂ (mic.) on dead leaves, 13-v-1972, S. Okajima; Okinawa Is., Katsuyama, 2 ♀ (mic.) on dead leaves, 2-viii-1973, S. Okajima; Yuku Is., Onoaida, 9 ♀ 2 ♂ (mic.) on *Miscanthus*, 6-i-1972, K. Haga. Japan, Honshu: Kyoto Pref., nr. Shizuhara, 1 ♀ (mic.) and 1 ♀ (mac.) on grass, 6-viii-1980, S. Okajima; Aichi Pref., Nisshin Nokata, 1 ♀ (mic.) in soil, 13-i-1986, T. Kato; Fukui Pref., Tsuruga, Shiraki, 4 ♀ (mic.) on dead branches, 7-vii-1978, S. Okajima; Kanagawa Pref., nr. Tsukui, 2 ♀ 1 ♂ (mic.) on grass, 10-x-1982, S. Okajima; Yamanashi Pref., nr. Fujiyoshida, 1 ♀ 1 ♂ (mic.) on grass, 30-vii-1981, S. Okajima; Chiba Pref., Ichikawa-shi, lower reaches of Riv. Tonegawa 10 ♀ 1 ♂ (mic.) and 5 ♀ (mac.) on grass, vi-1983, R. Terakoshi; Akita Pref., Honjoh-shi,

lower reaches of Riv. Koyoshi-gawa, 15 ♀ 8 ♂ (mic.) and 4 ♀ (mac.) on grass, 9-vii-1988, S. Okajima. Japan, Ogasawara Islands: Chichi-jima Is., Mt. Asahi-yama, 1 ♀ (apt.) on dead branches, 11-iii-1988, S. Okajima; Haha-jima Is., nr. Minami-zaki, 1 ♀ (apt.) on grass, 5-iii-1988, S. Okajima.

Nesothrips malacca Mound, 1974
(Fig. 21)

Nesothrips malacca Mound, 1974 [1], 164–166.

This species was described by Mound [1] based on three females from West Malaysia and Sumatra. Recently, additional females and males were collected from West Malaysia, Indonesia (Sulawesi and Bali) and the Philippines (Luzon and Mindanao). These records suggest its wide distribution in Southeast Asia.

All females and males of this species are macropterae, micropterae still having been unknown. There are some differences between local populations in colour of the legs and antennae. Specimens from West Malaysia have the third antennal segment largely brown and all femora brown with distal third yellow, but specimens from southern Sulawesi have the third antennal segment yellow to brownish yellow and all femora brown with distal half yellow. However, those from central Sulawesi, Bali and the Philippines are something intermediate between them.

The males are recorded for the first time, and a brief description is given below based on a male from West Malaysia.

Male (macroptera). Colour almost as in female. Head (Fig. 21) 0.88 times as long as broad; postocular setae longer than half the length of head, postocular and middorsal (vertexal) setae well developed; prothorax well developed, pronotum with a strong median longitudinal line, ml well developed, much longer than pa; forefemora enlarged, foretarsus with a strong tooth; B₂ and B₃ of subbasal wing setae long; tube 1.17 times as long as head.

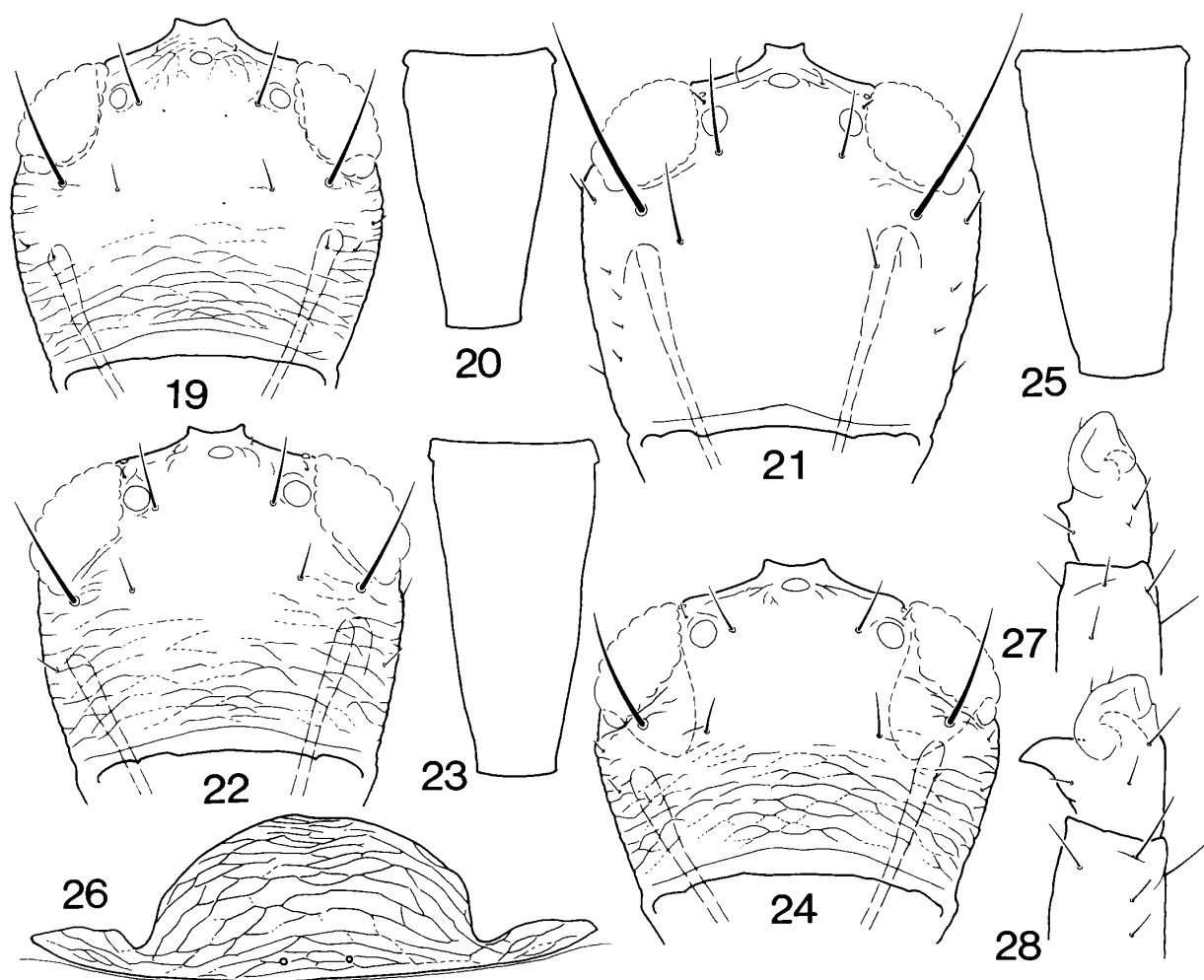
Measurements of male in μm . Total distended body length 2220. Head length 210, width across cheeks 240; eye length 70. Pronotum median length 184, width 290; forewing length 890. Pelta

median length 100, width 305. Tube length 245, basal width 107, apical width 49. Antennal segments I to VIII length (width) as follows: 55 (46); 56 (34); 87 (32); 79 (36.5); 76 (34.5); 69 (31); 45 (26); 20 (16.5).

Length of setae. Postocellars 40–61, postoculars 137–140, middorsals (vertexals) 24–50. Prothoracic aa 60–70, am 25–55, ml 170, pa 122, epim 140–150. Forewing subbasals B₁ 45–103, B₂ 175–200, B₃ 217–227. B₁ on tergite IX 180–185, B₂ on IX 121–148; anals 172–190.

Material examined. West Malaysia: Cameron Highlands, Tanah Rata, 2♀1♂ (mac.) on dead leaves, 2-iii-1976, 1♀ (mac.) 5-iii-1976, W. Suzuki, 1♀ (mac.) on dead branches, 24-vii-1976, S. Okajima; Genting Highlands, 30 ml E of Kuala Lumpur, 4,500', 1♀ (mac.) on dead wood with leaves,

28-ix-1973, L. A. Mound. Indonesia: South Sulawesi, Malino, alt. about 900 m, 3♀ (mac.) on dead Palmae, 3-viii-1984, S. Okajima; South Sulawesi, Karaenta Forest Res., Maros to Camba, alt. about 400 m, on dead branches, 3♀ (mac.) 5-viii-1984, 4♀2♂ (mac.) 6-viii-1984, S. Okajima; Central Sulawesi, nr. Rantepao, Pedamaran, alt. about 1,000 m, on dead leaves and branches, 1♀ (mac.) 8-viii-1984, 1♀ (mac.) 12-viii-1984, 1♀1♂ (mac.) 13-viii-1984, 1♀ (mac.) 14-viii-1984, S. Okajima; Central Sulawesi, 31 km W from Palopo, Puncak, alt. about 1,300 m, 2♀1♂ (mac.) on dead leaves and branches, 19-viii-1984, S. Okajima; Bali Is., Candi Kuning, alt. about 1,200 m, 4♀ (mac.) on dead branches, 26-vii-1984, S. Okajima. Philippines: Luzon Is., Quezon National Forest Park, 1♀ (mac.) on dead Palmae, 20-vii-



FIGS. 19–23. Head and tube of *Nesothrips* species—19–20, *N. brevicollis*, female, head (19) and tube (20); 21, *N. malacciae*, male, head; 22–23, *N. minor*, female, head (22) and tube (23). FIGS. 24–28. *N. yasumatsui* sp. nov.—24, female, head; 25, female, tube; 26, female, pelta; 27, small male, foretarsus; 28, large male, foretarsus.

1979, S. Okajima; Mindanao Is., Mt. Apo, Agko, alt. about 1,300 m, 1 ♀ (mac.) on dead leaves, 3-viii-1979, S. Okajima; Mindanao Is., Mt. Apo, Agko, alt. about 1,100 m, 1 ♀ (mac.) 5-viii-1979, W. Suzuki.

***Nesothrips minor* (Bagnall, 1921), sp. rev.**
(Figs. 7–10, 14–15, 18, 22 and 23)

Coenurothrips minor Bagnall, 1921 [6], 287–288.
Neosmerinthothrips formosensis var. *karnyi* Priesner, 1935 [4], 368–370.

Nesothrips minor: Mound, 1968 [7], 141.

Nesothrips brevicollis: Mound, 1974 [1], 162–163 (in part).

This species was described by Bagnall [6] based on a macropterous female from Rodrigues. Recently, Mound [1] treated it as a junior synonym of *brevicollis*. However, the specific name *minor* is now revived from a synonym of *brevicollis*, the reason for which is given under *brevicollis*. Mound [1] also treated *N. formosensis* var. *karnyi*, described on macropterous females from Java, as a synonym of *brevicollis*. However, it has the long wing retaining setae and tube, which are typical of *minor* but not found in *brevicollis*. Moreover, recently collected material from India, West Malaysia, Thailand, Indonesia (Java and Bali), Ogasawara Isls. and Hawaiian Isls. could well be determined as *minor*. These suggest its widespread distribution in tropical and subtropical Asia.

Contrary to the fact that the micropterous form is common in *brevicollis*, the macropterous form is prevalent in this species and the micropterous form is only rarely collected. However, I have examined some micropterous females and males from Thailand and Indonesia (Java and Sulawesi), which have well developed, long and curved wing retaining setae as in macropterae without exception.

Mound [1] regarded the Australian species *rhizophorae* possibly as a mere local colour variant of *brevicollis*. At present, *rhizophorae* is possibly only a colour variant of *minor*.

Material examined. Rodrigues: Holotype ♀ (mac.) of *Coenurothrips minor*, vii to xi-1918, H. J. Snell and H. P. Thomasset (in coll. British

Museum (Natural History), London). Indonesia: Java, Tjibodas, 1,400 m, lectotype ♀ (mac.) of *Neosmerinthothrips formosensis* var. *karnyi*, 1923, H. Karny (in coll. Senckenberg Museum, Frankfurt); Java, Mt. Tengger, 5 ♀ (mic.) on dead leaves, 14-iv-1981, T. Senoh; Bali Is., Kuta, Sea level, 1 ♀ (mac.) on dead leaves and branches, 30-viii-1984, S. Okajima; South Sulawesi, Malino, alt. about 900 m, 1 ♀ (mac.) on grass, 3-viii-1984, S. Okajima; South Sulawesi, 11 km E from Malino, Kanreapia, alt. about 1,500 m, 1 ♀ 1 ♂ (mic.) on grass, 2-viii-1984, S. Okajima. India: Aryankavu, 1 ♀ (mac.) on dry twing, 19-vii-1969, T. N. Ananthakrishnan. West Malaysia: Genting Highlands, 5,000', 4 ♀ (mac.) and 4 ♂ (hemimac.), 8-x-1973, L. A. Mound. Thailand: Phuket Is., 5 ♀ 5 ♂ (mac.) on dead leaves, 20-viii-1976, 20 ♀ 15 ♂ (mac.) on dead Banana leaves, 17-viii-1976, S. Okajima; Bangkok, Bangkok, Campus of Kasetsart University, NBCRC, on dead branches of *Casuarina equisetifolia*, 2 ♂ (hemimac.) 13-i-1988, 1 ♂ (hemimac.) 18-i-1988, S. Okajima; same locality as above, 1 ♀ (mac.) and 1 ♀ (mic.) on *Bougainvillea ? glabra*, 28-xii-1987, S. Okajima; nr. Chiang Mai, Mt. Doi Suthep, alt. about 500 m, 16 ♀ 10 ♂ (mac.) on grass, 8-viii-1976, S. Okajima. Hawaiian Isls.: Hawaii, Pupukeya, 1 ♀ (mac.) on *Leucaena glauca*, 16-xii-1969, F. Andre; Hawaii, Barber's Point, 16-xii-1969, 1 ♀ (mac.) by sweeping, F. Andre, 1 ♂ (hemimac.) on *Desmanthus*, K. Sakimura; Oahu, Honolulu, 1 ♀ (hemimac.) on *Cyperus rotundus*, 11-xii-1960, K. Sakimura. Japan, Ogasawara Isls.: Haha-jima Is., Okimura, 3 ♀ (mac.) on dead leaves, 13-vi-1972, Y. Watanabe; Haha-jima Is., 1 ♂ (mac.) on dead leaves and branches, 18-v-1984, M. Hasegawa; Haha-jima Is., nr. Okimura, Mt. Chibusa-yama, 1 ♀ (mac.) on dead leaves, 9-iii-1988, S. Okajima; Chichi-jima Is., Mt. Asahi-yama, 1 ♀ (mac.) on bamboo (*Pseudosasa japonica*), 11-iii-1988, S. Okajima; Chichi-jima Is., nr. Tokoyonotaki, 2 ♀ (mac.) and 1 ♂ (hemimac.) on dead branches, 11-iii-1988, S. Okajima.

***Nesothrips yasumatsui* sp. nov.**
(Figs. 24–28)

Female (macroptera). Head yellow to brownish

yellow; thorax brown, in contrast with yellowish head; abdomen brown to dark brown, segments II and IX somewhat paler than intermediate segments; tube blackish brown. Antennal segments I to VI yellow, almost concolorous with head or a little paler, sometimes apex of segment VI shaded with brown, segment VII yellowish brown, segment VIII brown. Legs yellow to brownish yellow, almost concolorous with head. Postocular and postocellar setae yellowish, all other major setae on thorax and abdomen brownish.

Head (Fig. 24) much broader than long, broadest across cheeks, very weakly projecting in front of eyes, dorsal surface weakly sculptured posteriorly; cheeks rounded; postocular setae acute; postocellar setae usually a little longer than half the length of postocular setae, situated just inside posterior ocelli. Eyes prolonged ventrally. Ocelli small, about 13 μm in diameter. Antennae about 2.7 times as long as head; segments III and IV with two and four sense cones respectively. Maxillary stylets typical of the genus.

Pronotum weakly sculptured posteriorly, with a weak short median line; major setae acute, am reduced to a short and slender hair. Metanotum sculptured with polygonal reticulation, but weak medially; median pair of setae slender, about 35 μm long. Forefemora not enlarged, foretarsi unarmed. Forewings each with 7 duplicated cilia; only two subbasal wing setae developed, B_1 reduced.

Pelta (Fig. 26) with a pair of micro-pores; median lobe broad, lateral wings not separated from median lobe, but somewhat constricted at base; posterior margin not eroded. Tergal wing retaining setae well developed, long and curved, but reduced on tergite II; B_1 and B_2 setae on tergite IX acute, much shorter than tube, B_2 longer than B_1 . Tube (Fig. 25) about 1.2 times as long as head (excluding preocular part), sides almost straight; anal setae much shorter than tube.

Measurements of holotype female (mac.) in μm . Total distended body length 1940. Head length from anterior margin of eyes to base at middle 153, width across cheeks 220; eye dorsal length 66, ventral length 87. Pronotum median length 132, width 244; forewing length about 800. Pelta median length 81, width 271. Abdominal tergites

median length (width) as follows: II 66 (406); IV 84 (464); VI 127 (472); VIII 107 (362); IX 78 (214). Tube length 184, basal width 91, apical width 46. Antenna total length 413, segments I to VIII length (width) as follows: 47.5 (46); 50 (36); 63 (32); 60 (32); 58 (33); 56 (31.5); 39.5 (24); 29 (15).

Length of setae. Postocellars about 740, postoculars 70. Prothoracic aa 37–40, am 32–40, ml 40–44, pa 55–58, epim 80–85. Forewing subbasals B_2 71–72, B_3 82–84. B_1 on tergite IX 76–80, B_2 on IX 97–100; anals 105–116.

Female (microptera). Colour and general structure almost as in macropterous female. Antenna about 2.7 times as long as head; metanotum a little shorter than that of macroptera; tube 1.05–1.16 times as long as head (excluding preocular projection); size of ocelli and shape of pelta very similar to those of macroptera.

Measurements of female (mic.) in μm . Total distended body length 2020. Head length from anterior margin of eyes to base at middle 158, width across cheeks 220; eye dorsal length 71, ventral length 84–87. Pronotum median length 143, width 256. Pelta median length 82, width 277. Abdominal tergites median length (width) as follows: II 71 (372); IV 92 (470); VI 131 (484); VIII 111 (344); IX 78 (209). Tube length 183, basal width 91, apical width 48. Antenna total length 402, segments I to VIII length (width) as follows: 47 (46.5); 52 (36); 60 (31); 59.5 (33.5); 55 (32.5); 52 (31); 38 (20); 28.5 (14).

Length of setae. Postocellars 42–45, postoculars 74–76. Prothoracic aa 38–40, am 25–28, ml 48–52, pa 50–55, epim 95–105. B_1 on tergite IX 82–85, B_2 on IX 110–116; anals 92–116.

Male (microptera). Colour almost as in female. Large male: prothorax well developed, pronotum with a strong median longitudinal line, forefemora enlarged, foretarsi each with a strong tooth (Fig. 28). Small male: Prothorax almost as in female or smaller, pronotum with or without a weak median longitudinal line, forefemora not enlarged, foretarsi each with a small tooth (Fig. 27).

Measurements of large (small) males in μm . Total distended body length 1500 (1200). Head length from anterior margin of eyes to base at middle 146 (128), width across cheeks 179 (163); eye dorsal length 60 (51), ventral length 62 (62).

Pronotum median length 152 (96), width 219 (168); forefemur length 220 (118). Pelta median length 51 (44), width 214 (143). Abdominal tergites median length/ width as follows: II 46 (40)/ 311 (229); IV 66 (50)/ 335 (253); VI 96 (76)/ 331 (252); VIII 81 (68)/ 228 (190); IX 66 (61)/ 146 (128). Tube length 148 (120), basal width 81 (66), apical width 40 (38). Antennal segments I to VIII length/ width as follows: 42 (34.5)/ 39.5 (32.5); 45 (39)/ 31.5 (30); 55 (46)/ 27 (24); 53 (43)/ 29 (27); 50 (42)/ 28 (28); 47.5 (43)/ 29 (28); 36 (29)/ 23 (20.5); 25 (24)/ 13 (13).

Length of setae. Postocellars 32–36 (26–29), postoculars 70–80 (45–54). Prothoracic aa 44–48 (20–30), am 30–34 (20–25), ml more than 70 (?40), pa 72 (37–40), epim 87 (58–60). Metanotal medians 40–45 (22–24). B₁ on tergite IX 74 (61–66), B₂ on IX 88 (about 80); anals 90–95 (75–80).

Holotype ♀ (mac.). Thailand: Kamphaeng Saen Campus of Kasetsart University, on grass, 22-xii-1987, S. Okajima.

Paratypes (42 ♀ 12 ♂ in total). Thailand: 3 ♀ (mic.), data almost the same as for holotype, but 12-i-1988; Chiang Mai, 26 ♀ 8 ♂ (mic.) on grass in rice field, 4-v-1978, K. Yasumatsu; 13 ♀ 4 ♂ (mic.), data very similar to above, but 7-v-1978.

Comments. This species is somewhat similar in appearance to *propinquus* (Bagnall) and *fodinae* Mound. The pelta of *propinquus* is eroded posteriorly and the lateral wings are separated from the median lobe, but the former is not eroded in this species and the lateral wings are widely fused to the median lobe. Moreover, the pedicel of the seventh antennal segment of this species is more or less broader than that of *propinquus*. From *fodinae*, it can easily be distinguished by the paler head and longer tube.

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